

AMENDMENTS TO THE CLAIMS

1. (Currently amended) An isolated polypeptide comprising consisting of an amino acid sequence selected from the group consisting of SEQ ID NO:2, SEQ ID NO:4 to SEQ ID NO:6, and SEQ ID NO:8 to SEQ ID NO:22 corresponding to the 34 kDa C-terminal portion of SEQ ID NO:2.

2-17. (Canceled)

18. (Currently amended) A method of treating a disease associated with a *Brachyspira* species, the method comprising administering to an animal an effective amount of (i) a polypeptide comprising consisting of the amino acid sequence corresponding to the 34 kDa C-terminal portion of SEQ ID NO:2 or (ii) the polypeptide of (i) together with an adjuvant, wherein the polypeptide can cause the animal to generate an immune response to the Brachyspira species.

19. (Canceled)

20. (Previously presented) The method of treating a disease according to Claim 18 wherein the disease is intestinal spirochaetosis.

21-22. (Canceled)

23. (Previously presented) The method according to Claim 18 wherein the animal is selected from the group consisting of: pigs, chickens, dogs, horses, cattle, sheep, fish, and humans.

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24. (Previously presented) A composition comprising a carrier and an immunogen wherein said immunogen is a polypeptide according to Claim 1.

25-26. (Canceled)

27. (Currently amended) An isolated polypeptide comprising consisting of an amino acid sequence that is at least 90% homologous to an amino acid sequence selected from the group consisting corresponding to the 34 kDa C-terminal portion of SEQ ID NO:2-to-SEQ ID NO:22 wherein the polypeptide can, when injected into an animal, cause the animal to generate an immune response to *Brachyspira* species.

28-31. (Canceled)

32. (Previously presented) The method of Claim 18, wherein the *Brachyspira* species is *Brachyspira pilosicoli*.

33. (Canceled)

34. (Currently amended) A method for treatment of infection with a *Brachyspira* species, the method comprising administering a therapeutically effective amount of a polypeptide comprising consisting of an amino acid sequence corresponding to amino acid residues 305 to 563 the 34 kDa C-terminal portion of SEQ ID NO:2.

35. (Previously presented) The method of Claim 34, wherein the *Brachyspira* species is *Brachyspira pilosicoli*.

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